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ABSTRACT

The production and distribution of educational materials developed by researchers is considered. The current practice of turning over federally or foundation funded products to commercial producers raises the question of pricing policies of these firms as compared to the policies of nonprofit development agencies. Comparative costs of producing and marketing these educational materials are outlined, and the data are analyzed. (JD)

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AT WHAT PRICES?[1]

by Fred S. Rosenau

The present philosophies and practices of federally-funded educational development agencies demand that well-validated educational R&D products[2] must be used.

If they are not, American taxpayers and teachers, parents and pupils will have been cheated.

But in the educational development community--not just in the Council for Educational Development and Research (CEDaR) but elsewhere--questions arise almost weekly about the price that users may be willing to pay for the installation and utilization of new "developmental" products and processes that have been proven operationally effective.

The products in question are usually those developed with federal or foundational funds by regional educational laboratories, university-based R&D centers, and other non-profit agencies. At the present time, these products are usually carried to a stage of operational readiness by the developers and then turned over to commercial or non-profit production/distribution organizations for delivery to the intended users. In the calculations of product pricing which follow, we must consider to what extent development costs (other than those occurring during the final stage of packaging and polishing) have been written off previously as a contribution to the national welfare.

The author is indebted to a number of friends for data used in this summary. Special thanks should be tendered to Robert Follett, John Spaulding, and Stanley Sanderson, each of whom will recognize how extensively he helped in the production of statistical and background information.

[1] In a background paper hastily prepared early in 1970 for a conference at Riverdale, N.Y., entitled "How Do We Get It To Him?", five marketing questions extracted from Up The Organization by Robert Townsend were cited. The title of this article is one of those five questions.

[2] In this connotation, the products under discussion are those designated as "developmental" rather than as "knowledge" in current U.S. Office of Education terminology.

We must note at this point that the tasks of achieving full dissemination and utilization cannot presently be carried out with the federal funds that are provided in basic contracts, cost-reimbursement contracts, or grants from the various public funding agencies. In recent years, the National Center for Educational Communication (NCEC) has funded some pilot dissemination and demonstration activities, but these are merely stimuli that serve to spotlight the magnitude of the overall problem.

Most educational developers have looked to the educational publishing industry for production and distribution of their major products. (These products have been protected during development by common-law or "developmental" copyright. Limited-term copyright has been obtained at the time of formal "publication.") A number are already being marketed by publishing firms. And out of these new commercial arrangements have emerged the very questions about pricing that we now confront. Therefore, at this point, we must rephrase the earlier question "At What Prices?" to ask instead: "Why must a commercial firm charge higher prices for a R&D product than would the non-profit development agency?"

The "top eight" (in dollar volume) educational publishing firms compiled statistics in 1969-70 that ran more or less as follows:

A.	Cost of goods	31.6%
B.	Plate cost	6.0
C.	Royalty	6.5
D.	Selling cost Promotion	13.6 7.2
E.	Shipping	4.5
F.	Editorial	6.1
G.	Gereral and administrative (i.e., overhead)	13.8
H.	Pretax profit	14.1 (includes 1.3% extraneous publishing income)

These industry average figures do not total 100%, but they will serve as a workable jumping-off point for this discussion.

Let us now take the average figures provided in late 1971 by one of the leading publishers, using $1.00 as a base figure:

A.	Manufacturing	$ .30
B.	Plant Costs	.07
C.	Royalties	.06
D.	Selling	.21
E.	Physical distribution	.07
F.	Editorial Costs	.06
G.	General and administrative	.10
H.	Taxes	.07
I.	After-tax profit	.06

Using these two sets of average figures, we can begin to see a logical pattern for book-oriented materials.[3] It is important to emphasize that these figures are simply averages--and that they cover a full spectrum of successes, failures, and everyday products. After all, any given publishing firm may be willing on occasion to take a much smaller profit or even accept a break-even situation for prestige or other competitive reasons.

"Cost of goods" or "manufacturing" means just what the terms imply. For books, this figure involves basically paper, printing, and binding. For multi-media products, the duplication of tape or film or recordings and the packaging of all the components would be included.

"Plate cost" or "plant cost" connotes typography, graphics, photography, and the making of original printing plates, dies, film masters, etc. All this outlay must be committed before the first "copy" comes off press.

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[3] This discussion is confined to "el/hi" materials--those produced by the school departments of diversified publishing firms. Different pricing patterns would apply in the college or professional/technical or trade departments of the same firms.

"Royalties" have been averaging from 6% to 8% in the educational publishing industry, but it is not uncommon for film or videotape royalties to run in the neighborhood of 18%. Royalties are commonly paid semi-annually, after the publisher has received payment from his customers.

"Selling cost" usually includes the cost of samples. Because of adoption practices for textbooks, it is possible for a publisher to give away as many as 100,000 copies gratis to educators in order to obtain wide-scale basic adoptions of a new text series. In addition, selling costs cover advertising, promotion, convention expenses, salesmen's travel expenses, etc.

"Shipping" or "physical distribution" covers such items as warehousing, freight, etc. Many publishers maintain or contract for regional depositories.

"Editorial cost" covers the in-house work on ideas for new educational products, the writing and re-writing of these materials, editing, copy-editing, and proof-reading. Assembling or creating artwork would also be included in this category. Editorial costs, of course, can be prorated over a period of perhaps five years, if no revision is anticipated during that time span.

For a multi-media, non-book-based product, the cost structure might differ somewhat. Here are two sets of figures (again using a $1.00 base), one from a long-established firm and the other from a newer, smaller competitor:

	1	2
Sales (including samples, previews, advertising, promotion, publicity, salesmen's travel & salary, etc.)	.37	.20
Overhead	.20	.15
Manufacturing (recurring)	.20	.30
Royalty	.08	.08
Plant cost (non-recurring)	.05	.05
Development costs (prorated over 5 years)	.04	.04
Profit	.06	.18

Another firm, commenting on the figures above, felt that the cost of development is too low; instead, it might run 18-20% for the first couple of years on a new project. This firm sets a goal of 15-20% pre-tax profit with 6% after taxes as its minimum.

The terms "overhead" and "general and administrative" should not need extensive explanation, though some of the items subsumed in this categorization might not fit on a one-for-one basis into the philosophy of the non-profit-oriented development agency. Among the many factors included would be specialized support services, accounting, order entry, collection, reserve for bad debts, profit sharing, occupancy, etc.

It is also important to consider some of the less apparent variables that can affect pricing policies. First, and perhaps most obvious, is the degree of completeness of the form of the product that is released from the non-profit development agency to the profit-oriented publisher. If the product is well refined, fully articulated, and ready for duplication, the producer/distributor will incur almost no editorial development costs. But if the product, even though well tested and proven operationally functional, is relatively "unfinished" and requires an extensive outlay in terms of "plant cost," the producing/distributing organization will need to invest significant resources in preparing the product for the market. For example, the conversion from black-and-white field-test videotapes to a marketable 16mm color film package is likely to call for a heavy investment of time, talent, and money. If the developer - as is likely - has field-tested the printed components of his product in a typewritten and multilithed format, the materials will require copy-editing, styling, typesetting, proofreading, artwork, platemaking, and other refinements before they can be considered a "completed" marketable package. The price to users of the final product will reflect the degree of investment required for these preliminary pre-publication steps.

The competitive situation will certainly affect the pricing structure. If a new mathematics program is to achieve installation and utilization, it cannot be priced very much higher - on a per pupil basis - than previously adopted curricular materials. Without federal subsidization, there are obviously limits as to how much schools can and will pay for curricular materials.

Market penetration is another key factor.[4] There will be a heavy investment in launching a radically different product or process, especially if the innovation involves major shifts in school operations or administration.[5] Sales management must retrain its field representatives so that they, in turn, can motivate the intended users and solve a host of sticky problems. Also since some of the newer products do not involve "adoptable" curricular materials, salesmen must be re-educated in terms of how to locate and contact appropriate gatekeepers and how to master new methods of effecting buying decisions. Some of the new products require the user to own or have access to specialized audiovisual equipment or other types of hardwar before the new software can be utilized. These challenges mean that sales management cannot simply tell its field force, "Here's a new set of texts; here's the background information you'll need. Now get samples to all your customers."

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[4] Developers must be cautious in the extent and nature of their field-test arrangements. Though field-testing can serve as a stepping-stone to later installation and utilization, in some instances overly pervasive use of field-test sites may narrow the eventual "commercial" potential of the completed product.

[5] The costs of training or retraining teachers and supervisory personnel often must be considered as a part of the actual or hidden cost of installing a new educational development in schools.

Another vital factor impinging on the prices of products issued by the commercial sector is return on investment. Clearly if the owners of a business could earn more by putting money into a savings account or buying government bonds, with almost no risk of loss, they will not invest in a project that seems likely to earn only a small return. American business averages roughly 10% as its return on invested capital. Hence we must assume that a commercial entrepreneur will require more than a 10% return if he invests in an R&D product offered him by a non-profit developer. Because of the various risks implied earlier, we can assume that many educational publishing firms will be seeking a return on investment of perhaps 15%.

We have already discussed the high costs that initial market penetration are likely to entail. Similarly we have examined the editorial cost range - low when the product is ready for immediate duplication (e.g., a film master that has already been completed), high when the product needs refining, packaging, etc. But we have not yet looked at the very obvious cost to the producer/distributor of maintaining an adequate inventory of the product and financing the receivables due him from his customers. It has been reported, for example, that accounts receivable, on a yearly average, are running at about 20% of sales in the school publishing business; moreover, inventory represents about 30% of sales. Also the curve of the year's incoming orders is highly skewed because of purchasing patterns peculiar to the timing of the school year. It is worth noting that the producer/distributor must pay to have large quantities of the product manufactured before the school year begins, but after shipment has been completed he must often wait many, many months for payment from financially-troubled big-city school systems.

Moreover, as most educational developers are already aware, initial sales of a new product are likely to be small, in light of the massive task of informing, demonstrating, re-educating, and nurturing that is required to effect change in schools or teacher-training institutions. The pre-publication and inventory investments of the producer/distributor cannot be recovered until the intended users adapt to and then adopt the new product or process on a reasonably extensive and intensive basis. The estimated length of the early investment stretch-out will clearly affect the way the product is priced initially.

If, however, the new product fits smoothly into the manufacturing and marketing channels of a given commercial firm and compliments the specialized talents of its sales force; if the competitive situation dictates a need for a given product as a mode of opening up new markets for other products already in the firm's distribution pipeline; if one firm feels it must market a given product to keep it from its competitors; if the product for one or more reasons requires less capital outlay; if the product seems focused for a receptive market with ample disposable funds - then we can anticipate that the price to users will be honed down somewhat.

In essence, no one working in a non-profit R&D agency should expect the price of the finished product to resemble closely the cost of his own GPO-duplicated field-test version. Nor should we be deluded by subscribing to the age-old "better mousetrap" theory of distribution. Certainly there will be some products that can be simply duplicated and that educators will discover serendipitously. But where the installation and utilization tasks are estimated as far-ranging, long-term, or complex, significantly higher costs must be anticipated regardless of what mode of production and distribution may be selected.

APPENDIX A[6]

The Far West Laboratory for Educational Research and Development has used 16mm film (black and white, and color), color filmstrips, audio tape, and black and white video tape fairly extensively in recent years. (As yet, none of its products has required a phonograph record.) We include here the actual costs of reproducing materials using these media so that the reader can compare and contrast these short-run quantity costs with the prices currently charged for similar educational items now distributed nationally by various commercial and non-profit agencies.

1. 16mm film:

Assuming an internegative is available (average price: 28¢ per foot), release print costs are:

Prints	Per Foot
1	.1427¢
2-10	.1260¢
11-25	.1148¢
26-50	.1093¢

In addition, a can and reel to hold a 30-minute film costs $2.80 (metal) or $2.30 (plastic); labels cost $15.00 per hundred.

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[6] All of the information in this appendix was prepared by Michael Cunningham, George Heuga, and the staff of Media Services at the Far West Laboratory. The author will cheerfully accept responsibility only for simplification and condensation of their enormously detailed efforts.

2. Filmstrip (35mm):

Assuming the original 35mm color master transparencies are converted into a 35mm color negative ($2.50 per frame), release print costs are:

Length	Per Foot
1 - 50 feet	$5.00 minimum
51 - 500 feet	.175¢
501 - 5,000 feet	.145¢

Note: A 50-frame filmstrip (including leader at beginning and end) equals five feet of film. Thus most color filmstrips would cost $1.25 each for duplicate copies.

Additional costs include $13.50 set-up charge per order; 15¢ per can; and $10.00 per hundred for can labels.

3. 1/4-inch Audio Tape:

After a work master is produced on 1.5 mil tape (about $80 for a 30-minute recording), costs for release dubs would run as follows:

(1 = cassettes; 2 = reel-to-reel)

Quantity	30-minute:		60-minute:		90-minute:	
	1	2	1	2	1	2
1-4	2.75	3.75	3.00	5.25	3.50	6.00
5-7	2.50	3.00	2.75	4.20	3.00	5.20
8-11	2.40	2.75	2.60	3.60	2.90	4.50
51-100	2.00	2.00	2.25	3.10	2.55	3.80
101-200	1.75	1.50	2.00	2.50	2.50	3.30
201-300	1.65	1.25	1.75	2.40	2.40	3.10

Costs include tape, reel and box. Labels would cost $15.00 per hundred additional.

4. Long-Playing Phonograph Records:

Once an original disc and a mother copy are ready, processing costs run as follows:

1,000 records = $1.50 each

5,000 records = $1.07 each

These figures include 3-color jackets and cover, if artwork is supplied.

5. Videotape:

From a master videotape, "custom" dubbing to various VTR formats is possible, but costly in terms of time and labor costs. Therefore, it will usually be preferable to convert the completed videotape to 16mm kinescope prints. In small quantity, it will probably be most economical to produce positive film prints, ready for operational use.

Transferring a videotape to 16mm positive or negative film (including optical track academy leader, proper identification on head leaders, syncing, and a first trial composite) costs:

In color - $40 per minute

(minimum - $375)

In black and white - $14 per minute

(minimum - $75)

For larger quantity runs, a negative is ordered and then release prints can be made at the costs shown previously. (See #1 in this appendix.)

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APPENDIX B[7]

For comparison purposes, the reader may wish to examine some commercial educational products and contrast them with non-commercial items of comparable size. A non-profit agency will usually create its "finished" product by typing the material and reproducing copies by multilith. Collating and binding will often involve only small quantities. Thus, some of the work can be done by hand, using relatively low-salaried personnel.

Here are some examples of products created by a non-profit development agency and placed on sale at very reasonable prices:

	Pages	Size	Half-tones	Comp.	No. of Colors Paper	Binding	Units Produced	Sale Price	Units Sold-10/22/71
Teacher's Guide A	148	6x9	Yes	Type-set	3	Spiral	6,000	4.00	2,508
Leader's Manual B	438	8-1/2 x11	No	Typed	3	Perfect	500	4.00	272
Leader's Manual C	300	8-1/2 x11	No	Typed	3	3-hole ring	600	6.00	246
Leader's Manual D	224	8-1/2 x11	No	Typed	2	3-hole ring	500	4.00	83
Leader's Manual E	410	8-1/2 x11	No	Typed	3	3-hole ring	600	5,00	156
Teacher's Guide F	132	7-1/2 x10	Yes	Type-set	8	Perfect	6,000	3.00	4,589

The only assumptions we can safely make about the figures above are: (a) some of the items would probably not have excited the interest of commercial educational publishers; and (b) if any of these items had been manufactured and sold by a profit-making firm with a field sales force, the price to users would very likely have been somewhat higher.

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[7] The data shown here were obtained from another regional educational laboratory, whose cooperation is hereby acknowledged with gratitude.